



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D4680-041
Job Sheet 172207



Part No: D4680-041

Job Qty: 1 ea

Part Name: Skidtube Assembly



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 2/13/18

Job Tracking No:

Due Date: 2/28/18

Created By: Michelle Gagnon-Donovan

Type: Stock

Description:

Note: DWG REV F IPP REV:A 13.04.16 NEW ISSUE DD VERF:JLM IPP REV:B 13.08.08 PB2 DD VERF:JLM IPP REV:C 13.09.10 PB3 DD VERF:JLM IPP REV:D 13.11.14.AS PER DWG REV.B DD VERF:JLM IPP REV:C 14.11.24 AS PER DWG REV.C DD VERF:JLM IPP REV:D 15.06.10 AS PER DWG REV.D DD VERF:JLM IPP REV:E 16.03.23 AS PER DWG REV.E DD VERF:JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea	2/27/18	2/27/18	0.00	0.00	Start Up Skidtubes-2		BE
120	Skidtubes	1 pcs	2/27/18	2/27/18	0.00	4.86	Skidtubes-2		BE DAS 38
140	QC	1 pcs	2/27/18	2/27/18	0.00	0.00	QC5		SA 18-05-29
150	HandFinish	1 pcs	2/27/18	2/27/18	0.00	0.73	HandFinish1		BE DAS 38
160	QC	1 pcs	2/27/18	2/27/18	0.00	0.00	QC7-4		BE DAS 38
170	Skidtubes	1 pcs	2/27/18	2/27/18	0.00	4.86	Skidtubes-2		BE DAS 38
180	QC	1 pcs	2/27/18	2/27/18	0.00	0.00	QC5		BE DAS 38
210	HandFinish	1 pcs	2/27/18	2/27/18	0.00	0.73	HandFinish2		BE DAS 38
220	Powdercoat	1 pcs	2/27/18	2/27/18	0.00	0.17	Powdercoat1		BE DAS 38
230	QC	1 pcs	2/27/18	2/27/18	0.00	0.00	QC3		BE DAS 38
260	HandFinish	1 pcs	2/28/18	2/28/18	0.00	0.73	HandFinish4		BE DAS 38
270	QC	1 pcs	2/28/18	2/28/18	0.00	0.00	QC5		BE DAS 38
300	Packaging	1 pcs	2/28/18	2/28/18	0.00	0.00	Packaging3-2		BE DAS 38
310	QC21-SA	1 Ea	2/28/18	2/28/18	0.00	0.00	QC21		BE DAS 38

Part Op 120 - 1-Cut Aft end as per dwg D4680 3-Drill Aft & Fwd Cap holes using DT8678 & DT8901 open aft cap 0.187". 4-Location Descriptions: DT10149 & Drill Ground wire hole on top of Tube. 5-Location DT10149 with 0.187" cleco in aft cap, then Pilot Drill all X-Bolt holes using 0.187" drill. 6-Open ground wire hole .297" at 95.75" (1 at fwd end & 2 at aft end at 20.81" ref.) 8- 3 most fwd x-bolt holes must be laid out manually, open to #30. 9-Open Aft & Fwd Cap holes using .208" drill. 10- Open X-Bolt holes to .750" (10 places) 11- Drill Rivet Holes as per Dwg D4680 using DT10065 ***DO NOT DRILL RIVET HOLES ON SECTION G-G (TWO PLACES) Open G-G to .750 12-Deburr holes.

170 - 1- Bond web as per Dwg D4680 & QSI 015 2- Seal all faying surfaces using proseal and rivet Doubler as per Dwg D4680. A/R Proseal Batch: 138784 exp date: 9/18 ***LET IT CURE FOR 7HRS*** START TIME: FINISH TIME: 3- Rivet doublers as per dwg Shave rivet as required, remove

Proseal spill over. 4- Ream holes section C-C as per dwg, deburr 8 places 5- Swage x-bolt spacers as per Dwg D4680 and section C-C 8 places. 6- Swage x-bolt spacer as per dwg D4680 section G-G 7- Trim/Grind flush per QSI 002 210 - Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

220 - START TIME: 10:20 A.T. 320° FINISH: 10:50 M B8760.

260 - 1- Install Ground Wire inserts as per Dwg D4680. 3- Install Fwd & Aft caps as per Dwg D4680 and Detail "A" & "B". Fastener must be install wet as per note (9). 4- Wing Walk as per Dwg D4680 and QSI 005 4.4



002647

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D4680-041-BENT	Extrusion Bent	1 Ea (1 ea)	90-Start up Operation	B1163755
D5520-1	Doubler	2 Ea (2 ea)	90-Start up Operation	5045659
CR3212-5-05	Rivet	68 pcs (68 ea)	170-Skidtubes	5043794
D4681-041	Web Assembly	1 Ea (1 ea)	170-Skidtubes	5040236
AELS-1032-130	Rivnut	3 Ea (3 ea)	260-HandFinish	5645668
AN3C4A	Bolt	3 Ea (3 ea)	260-HandFinish	5041114
AN3C5A	Bolt	2 Ea (2 ea)	260-HandFinish	
AN526C1032R10	Screw	2 Ea (2 ea)	260-HandFinish	5059137
D2965	Cap	1 Ea (1 ea)	260-HandFinish	5056487
D2965-3	Cap	1 Ea (1 ea)	260-HandFinish	F126369
D4686-1	Spacer	8 Ea (8 ea)	260-HandFinish	5054739
D5304-1	Crossbolt Spacer	2 Ea (2 ea)	260-HandFinish	5018583
MS20601-AD4W3	Rivet	32 Ea (32 ea)	260-HandFinish	5016824
NAS1149C0332R	Washer	5 Ea (5 ea)	260-HandFinish	5044723
D4753-1	Doubler	16 Ea (16 ea)	300-Packaging	B1164971 x 10 5053532 x 6

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D4680-041-BENT	1	4	0
	D5520-1	2	16	0
170-Skidtubes	CR3212-5-05	68	507	0
	D4681-041	1	5	0
260-HandFinish	AELS-1032-130	3	0	0
	AN3C4A	3	3,674	0
	AN3C5A	2	807	0
	AN526C1032R10	2	107	0
	D2965	1	0	0
	D2965-3	1	44	0
	D4686-1	8	18	0
	D5304-1	2	35	0
	MS20601-AD4W3	32	401	0
	NAS1149C0332R	5	2,187	0
300-Packaging	D4753-1	16	16	0

Part Specifications

Specifications could not be found.

Plex 2/13/18 3:36 PM Dart.Gagnon.Michelle

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Container No: S053275

Part: D4680 - 041

Job No: 172207

Serial No/Batch: S053275

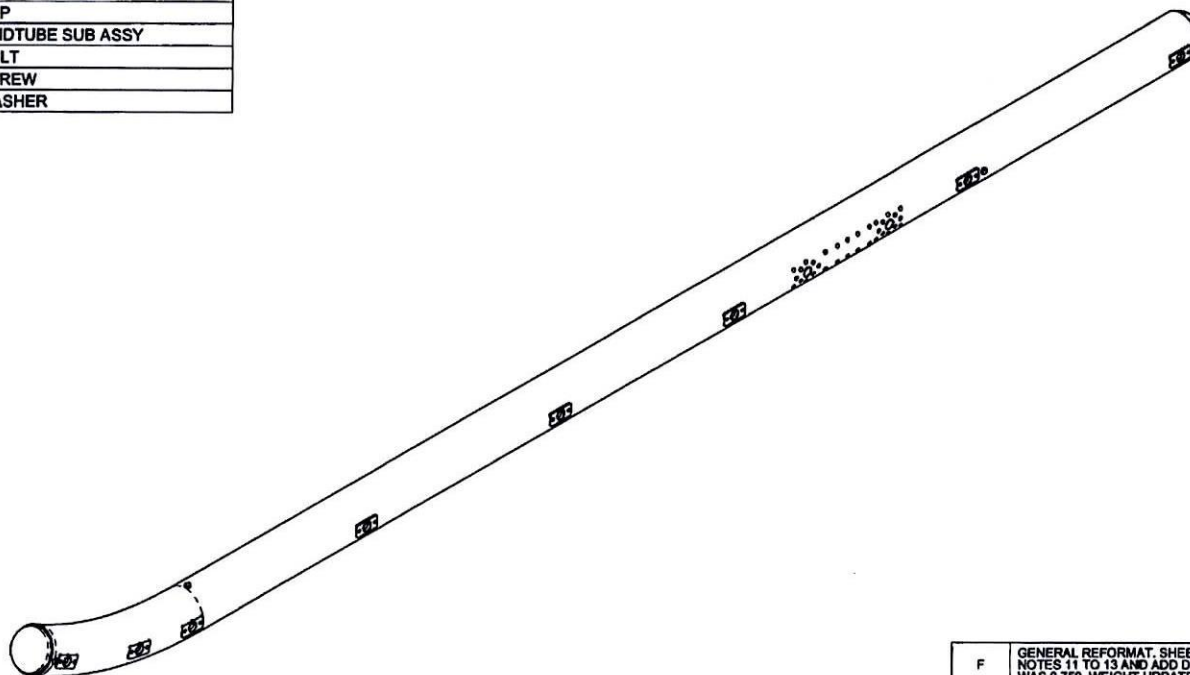
Revision:

Inspector:

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Hawkesbury, ON K6A 1K7
CANADA
TEL: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Date: 03/21/18

ITEM	QTY -041	P/N	DESCRIPTION
	X	D4680-041	SKIDTUBE
1	1	D2965	CAP
2	1	D2965-3	CAP
3	1	D4680-043	SKIDTUBE SUB ASSY
4	2	AN3C5A	BOLT
5	2	AN526C1032R10	SCREW
6	2	NAS1149C0332R	WASHER



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SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 172207 *ml*

FEB 13 2018

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: PAINT TOP SURFACE OF SKIDTUBE WITH MIL-W-5044 ANTI-SKID PAINT (WING WALK) AS INDICATED TO 1.00 ABOVE CENTERLINE PER QSI 005 SECTION 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4680-041" AND B/N PER QSI 044 METHOD 6.4 ON INNER RADIUS OF SKIDTUBE BEFORE INSTALLING D2965 CAP
- 7) WEIGHT: 19.3 lbs
- 8) SEAL FAYING SURFACES WITH SIKAFLEX -241/-291 OR PROSEAL 890/1422 OR MIL-S-8802 CLASS B-2 SEALANT
- 9) INSTALL FASTENERS WET WITH SIKAFLEX -241/-291 OR PROSEAL 890/1422 OR MIL-S-8802 CLASS B-2 SEALANT

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2017-08-11
ECV17-547

F	GENERAL REFORMAT. SHEET 3: ADD ITEMS 8 & 11 ADD NOTES 11 TO 13 AND ADD DETAIL H. SHEET 5: Ø0.188 WAS 0.750. WEIGHT UPDATE. ADD PROSEAL 1422	AJS	17.03.30
E	GROUND HANDLING CROSSBOLT SPACERS NOW SWAGED, WAS WELDED. REMOVED D3492-055 PLUG ASSEMBLIES	AP	15.11.02
D	MOVED AFT GROUNDING FASTENER HOLE AFT 0.25 DUE TO INTERFERENCE. ADDED NOTE 9 (SHT 1), GROUNDING STRAP WASHERS NOW STAINLESS	AP	15.03.04
C	NAS1149F0332P WAS AN980-10L. AN526C1032R10 WAS AN526C1032-10. FWD GROUNDING STRAP FASTENER MOVED AFT (C5-3), Ø0.750 WAS Ø0.758 (B4-3).	AP	14.07.29
B	FWD CAP WAS D2965 NOW D2965-3. VARIOUS DIMENSIONAL CHANGES. D3492-055 PLUG ASSY WAS D3492-051. SWAGING DIMENSION NOW 0.650 WAS 0.681 (D8-2). ADDED DETAIL H (C2-3). MATERIAL D2962-150 WAS D2962-131 (A7-3). GROUND HANDLING THRU HOLES NOW WELDED, ADDED SECTION G-G (D3-2)	AP	13.09.10
A	NEW ISSUE	AP	13.02.13
REV.	DESCRIPTION	BY	DATE
DESIGN	AP	DART AEROSPACE USA, INC. EUGENE, OR	
DRAWN	AJS		
CHECKED	ML	DRAWING NO.	REV. F
MFG. APPR.	DP	D4680	SHEET 1 OF 5
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	SKIDTUBE	NTS
DATE	17.03.30	COPYRIGHT © 2013 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR REPRODUCED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

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AN526C1032R10
SCREW
2 PL
8

D2965-3
CAP
8

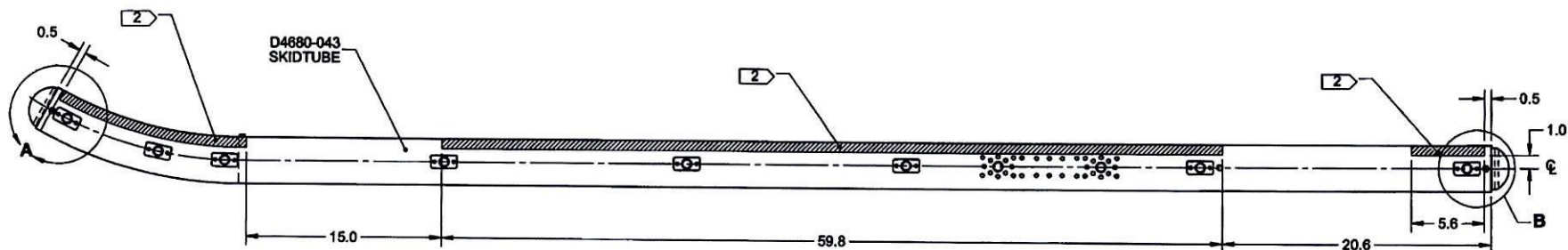
DETAIL A
SCALE 4X

8

D2965
CAP

AN3C5A BOLT
NAS1149C0332R WASHER
2 PL
9

DETAIL B
SCALE 4X



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DESIGN	AP	DART AEROSPACE USA, INC. EUGENE, OR	
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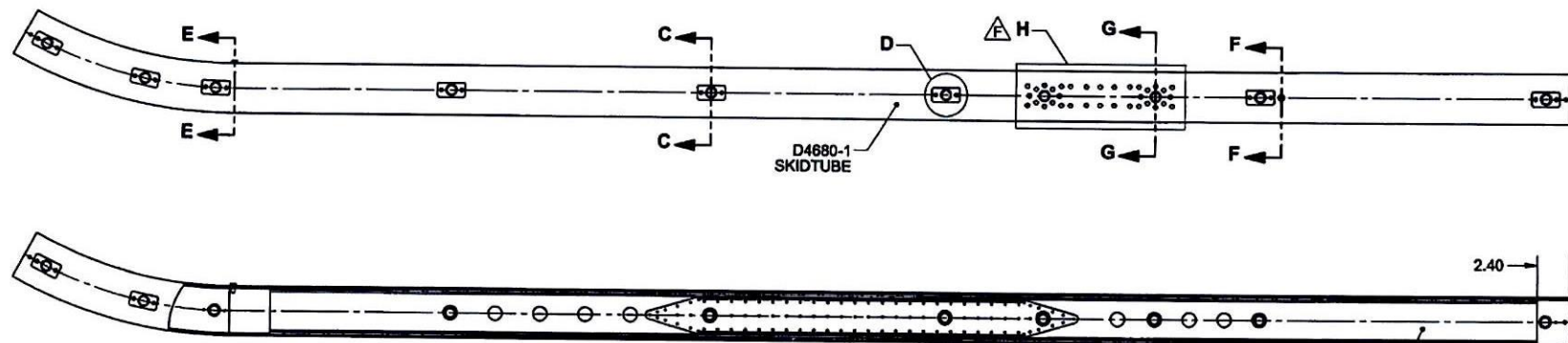
ITEM	QTY	P/N	DESCRIPTION
	X	D4680-043	SKIDTUBE SUB ASSY
1	1	D4680-1	SKIDTUBE
2	1	D4681-041	WEB ASSY
3	8	D4686-1	SPACER
4	16	D4753-1	DOUBLER
5	2	D5304-1	CROSSBOLT SPACER
6	2	D5520-1	DOUBLER
7	3	AN3C4A	BOLT
8	32	MS20601AD4W3	RIVET, BLIND, CSK
9	3	NAS1149C0332R	WASHER
10	3	AELS-1032-130	INSERT
11	68	CR3212-5-05	CSK RIVET, CHERRY MAX

OPEN TO
Ø0.750
THRU 2 PL

13 12 CR3212-5-05
CSK RIVET, CHERRY MAX
34 PL PER DOUBLER

DETAIL H
SCALE 4X

11 D5520-1 DOUBLER
2 PL



D4680-043 SKIDTUBE SUB ASSY

9 D4681-041
WEB ASSY

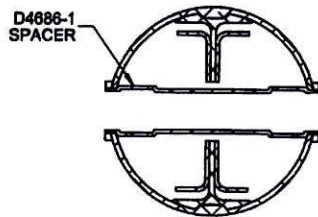
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: APPLY CHEMICAL CONVERSION COATING PER DART QSI 005 4.1 PRIOR TO INSTALLING D4681-041 WEB. POWDER COAT WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 18.6 lbs
- 8) SEAL ALL MATING SURFACES USING PROSEAL 890/1422 OR MIL-S-8802 CLASS B2 SEALANT
- 9) INSERT D4681-041 WEB INTO D4680-1 SKIDTUBE IN LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX -241/-291 ADHESIVE PER DART QSI 015
- 10) INSTALL D4686-1 SPACER AFTER INSTALLING D4753-1 DOUBLERS
- 11) LOCATE THE D5520-1 DOUBLER USING THE Ø0.188 PILOT HOLES ON THE SKIDTUBE AND DOUBLER
- 12) LOCATE QTY (34) HOLES ONTO THE SKIDTUBE PER D5520-1 DOUBLER AND DRILL Ø0.161 THRU SKIDTUBE AND DOUBLER USING DT10309
- 13) COUNTERSINK THE SKIDTUBE Ø0.286 X 100° (34 PL) AND INSTALL EACH D5520-1 DOUBLER USING QTY (34) CR3212-5-05 CSK RIVETS

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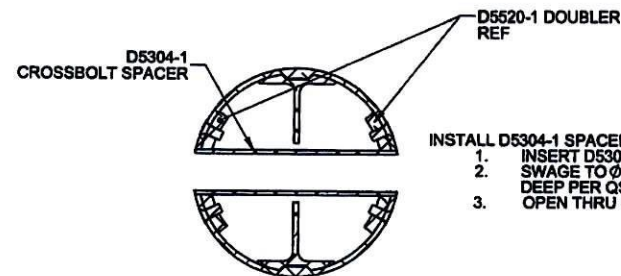
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DRAWN	AJS	EUGENE, OR	
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MFG. APPR.	DP	D4680	SHEET 3 OF 5
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	SKIDTUBE	NTS
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10 SECTION C-C
SCALE 4X
8 PL

INSTALL D4686-1 SPACER AS FOLLOWS (8 PL)
AFTER INSTALLING D4753-1 DOUBLERS PER DETAIL D

1. INSERT D4686-1 SPACER
2. SWAGE TO $\phi 0.650 +0.010/-0.000 \times 1.0$
DEEP PER QSI 002
3. TRIM/GRIND FLUSH PER QSI 002

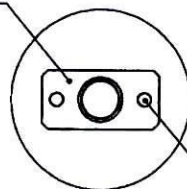


SECTION G-G
SCALE 4X
2 PL

INSTALL D5304-1 SPACER AS FOLLOWS (2 PL)

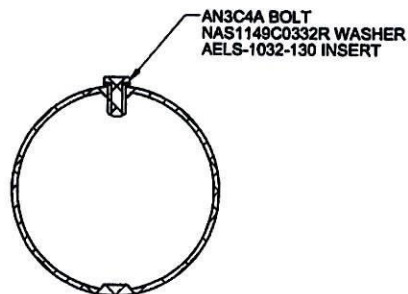
1. INSERT D5304-1 SPACER
2. SWAGE TO $\phi 0.665 +0.005/-0.000 \times 1.0$
DEEP PER QSI 002
3. OPEN THRU HOLE TO $\phi 0.625$

8
D4753-1
DOUBLER

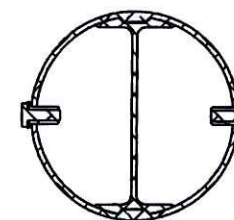


DETAIL D
16 PL (BOTH SIDES)
SCALE 4X

MS20601AD4W3
RIVET, BLIND, CSK
2 PL



SECTION E-E
SCALE 4X



SECTION F-F
SCALE 4X

AN3C4A BOLT
NAS1149C0332R WASHER
AELS-1032-130 INSERT
2 PL

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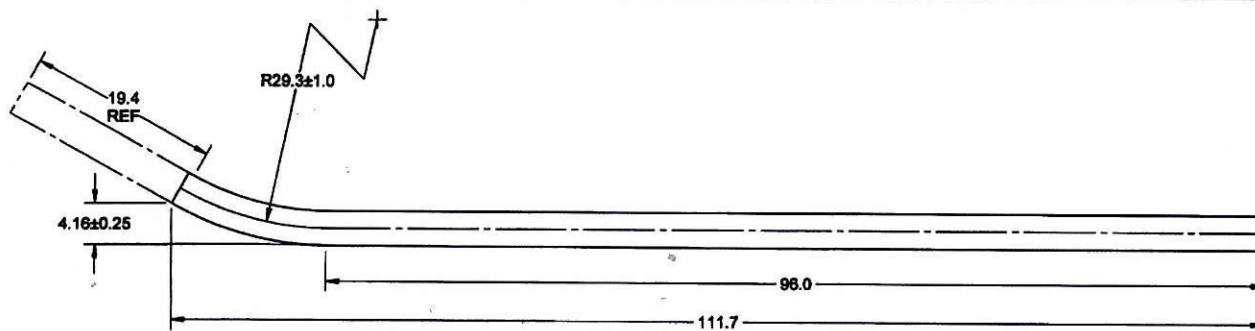
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APPROVED	WM
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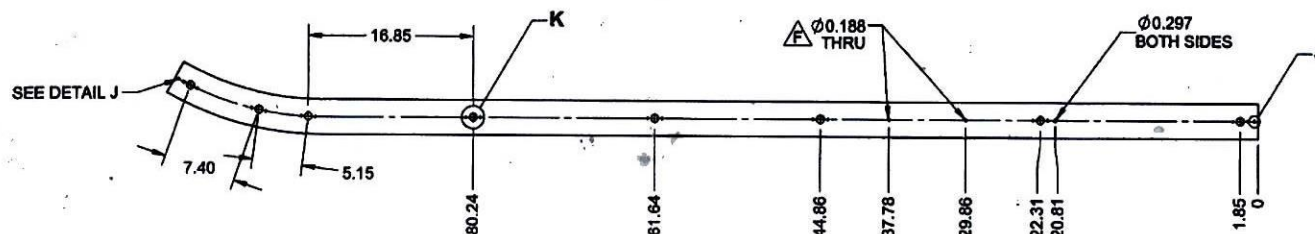
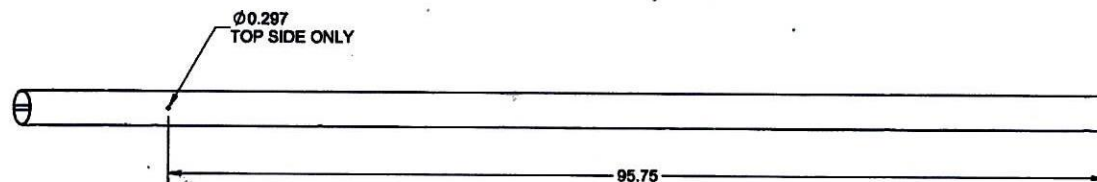
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EUGENE, OR

DRAWING NO.	REV. F
D4680	SHEET 4 OF 5
TITLE	SCALE
SKIDTUBE	NTS

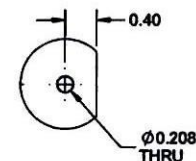
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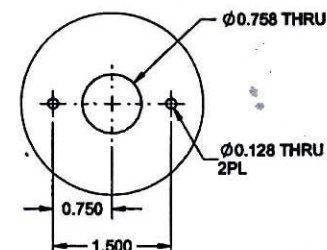
D4680-1 SKIDTUBE BENDING/TRIMMING DETAIL



D4680-1 SKIDTUBE DRILLING DETAIL



DETAIL J
SCALE 8X
2 PL



DETAIL K
SCALE 8X
8 PL

- NOTES:**
- 1) MATERIAL: MAKE FROM D2962-150 EXTRUSION
 - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 11.38 lbs

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